99E-108

4.5 PSP Cover Sheet (Attach to the front of each proposal)

Proposal Title: Tamarisk & Arundo on Cache Creek: Removal, Revegetatic
Applicant Name: Cache Creek Conservancy
Mailing Address: 34490 County Road 25, Woodland, CA 95695
Telephone: 530-661-1070
Fax: 530-661-1070
Email: Cachecrk@yolo.com (all lowercase)

Amount of funding requested: $968,700** for 3 years

Indicate the Topic for which you are applying (check only one box).

- ☐ Fish Passage/Fish Screens
- ☐ Habitat Restoration
- ☐ Local Watershed Stewardship
- ☐ Water Quality
- ☑ Introduced Species
- ☐ Fish Management/Hatchery
- ☐ Environmental Education

Does the proposal address a specified Focused Action? ✓ yes _____ no

What county or counties is the project located in? Yolo County

Indicate the geographic area of your proposal (check only one box):

- ☐ Sacramento River Mainstem
- ☒ Sacramento Trib: Cache Creek
- ☐ San Joaquin River Mainstem
- ☐ San Joaquin Trib: _____
- ☐ Delta: _____
- ☐ East Side Trib: _____
- ☐ Suisun Marsh and Bay
- ☐ North Bay/South Bay: _____
- ☐ Landscape (entire Bay-Delta watershed)
- ☐ Other: _____

Indicate the primary species which the proposal addresses (check all that apply):

- ☐ San Joaquin and East-side Delta tributaries fall-run chinook salmon
- ☐ Winter-run chinook salmon
- ☐ Late-fall run chinook salmon
- ☐ Delta smelt
- ☐ Splittail
- ☐ Green sturgeon
- ☒ Migratory birds
- ☒ Other: Tamarix & Arundo Donax
- ☐ Spring-run chinook salmon
- ☐ Fall-run chinook salmon
- ☐ Longfin smelt
- ☐ Steelhead trout
- ☐ Striped bass
- ☐ All chinook species
- ☐ All anadromous salmonids

Specify the ERP strategic objective and target (s) that the project addresses. Include page numbers from January 1999 version of ERP Volume I and II:
Goals #4 & 5 ERP Vol #1, pg 1
Riparian Invasive species, Vol #1, p. 478, 479, 480
Stressors & Restoration Actions ERP Vol #2, p. 339, 341, 342

Indicate the type of applicant (check only one box):

☐ State agency	☐ Federal agency
☐ Public/Non-profit joint venture	☒ Non-profit
☐ Local government/district	☐ Private party
☐ University	☐ Other: _____

Indicate the type of project (check only one box):

☐ Planning	☒ Implementation
☐ Monitoring	☐ Education
☐ Research	

By signing below, the applicant declares the following:

1.) The truthfulness of all representations in their proposal;

2.) The individual signing the form is entitled to submit the application on behalf of the applicant (if the applicant is an entity or organization); and

3.) The person submitting the application has read and understood the conflict of interest and confidentiality discussion in the PSP (Section 2.4) and waives any and all rights to privacy and confidentiality of the proposal on behalf of the applicant, to the extent as provided in the Section.

Printed name of applicant

Signature of applicant

TITLE: ***Tamarix*** and ***Arundo*** Control on Cache Creek: Removal, Revegetation, Management, and Education

APPLICANT INFORMATION:

Cache Creek Conservancy
Ann Brice, Executive Director
Jan Lowrey, Projects Coordinator
34490 County Road 25
Woodland, CA 95695

phone: 530-661-1070
fax: 530-661-1070
e-mail: cachecrk@yolo.com

PARTICIPANTS/COLLABORATORS

Yolo County Planning and
Public Works Dept.
David Morrison, Resource Manager

phone: 530-666-8041
fax: 530-666-8156
e-mail: david.morrison@yoloco.fabrik.com

Dept. of Conservation
Office of Mine Reclamation,
Abandoned Mines Unit
Gail Newton, Manager

phone: 916-323-8564
fax: 916-666-8156
e-mail: gnewton@consrv.ca.gov

Jones and Stokes Associates
Ron Unger, Restoration Ecologist

phone: 916-737-3000
fax: 916-737-3030
e-mail: RonU@jsanet.com

TYPE OF ORGANIZATION/TAX STATUS: Independent nonprofit corporation/501(c)3

TAX IDENTIFICATION NUMBER: 1959467

EXECUTIVE SUMMARY

PROJECT DESCRIPTION

This is the second submission to CALFED of a project proposal by the Cache Creek Conservancy to remove non-native invasive plant species on Cache Creek. **This project is designed to meet the CALFED objectives outlined in the "Strategic Plan for Ecosystem Restoration (SPER), February 1999. Action 1 under "Cache Creek Stage 1 Actions" is "Control or eradicate non-native riparian plants and re-vegetate with native plants"(SPER, p. 83).** Our proposed project will enhance and restore in-stream aquatic, shaded riverine, and seasonal wetland habitats in the Cache Creek Watershed by establishing a program to control the spread of *Tamarix* and *Arundo* and encourage revegetation with native riparian species.

The focus of this proposal is fivefold:

1) to document the extent and rate of encroachment of *Tamarix* and *Arundo*,
2) to implement a project for *Tamarix* and *Arundo* removal and replacement with native species, with the long-term goal of improving bank stabilization and native fish and wildlife habitat,
3) to monitor the results of 1) and 2),
4) based on the findings in 1) and 2), to develop a locally-adapted protocol for *Tamarix* and *Arundo* control and revegetation on several reaches of Cache Creek, thus providing broad ecosystem benefits to this watershed, which will also serve as a model for others,
5) to conduct an outreach program to educate the community, especially the creekside landowners, about the adverse effects of non-native invasives and provide cost effective and efficient control and management strategies for them to implement on their properties..

PRIMARY BIOLOGICAL/ECOLOGICAL OBJECTIVES

Controlling the encroachment of *Tamarix* and *Arundo* on Cache Creek is critical in preventing them from threatening the Bay-Delta ecosystem. The Cache Creek Watershed supports riparian-associated wildlife, such as red and yellow legged-frogs, western pond turtle, various native fish species, Swainson's hawk, bank swallow, and other migratory birds, all of which will benefit by the removal of invasive non-natives and augmentation of native plant species along the creek.

CALFED's "Adaptive Management Considerations" for Cache Creek are incorporated into the proposal protocol. They include: "**Evaluate different removal and re-vegetation techniques to identify the most effective and cost-effective methods for controlling or eradicating non-native or invasive riparian plant species. Monitor the rate of re-colonization by native, non-native and invasive species. Determine the ecological conditions or processes that favor native species over non-native species."(SPER, p.83).**

SIZE AND LOCATION

The project encompasses approximately 550 acres of riparian area along 35 miles of Cache Creek. Project sites will be located within the Cache Creek watershed in Yolo County. Specifically, this proposal focuses on the areas of Cache Creek where the *Tamarix* and *Arundo* infestations are heavy, as determined by aerial photography, generally between the towns of Rumsey and Yolo, as shown on the attached map (see Attachment A).

BUDGET COSTS AND THIRD PARTY IMPACTS

The entire budget request is $968,700. The third party impacts will be positive and include assisting projects involved in ecosystem restoration and *Tamarix* and *Arundo* control in other watersheds within the Bay-Delta ecosystem.

APPLICANT QUALIFICATIONS

The mission of the Cache Creek Conservancy is to promote the restoration of lower Cache Creek. The Conservancy's board of directors includes local elected officials, creekside landowners, farmers, members of the aggregate industry, environmental professionals and community leaders. Ann Brice, Executive Director, has a Ph.D. in Ecology and many years experience in research, project management, and student/volunteer and staff supervision. Jan Lowrey, Projects Coordinator, is a fourth generation farmer along Cache Creek and has 20 years experience in farm management, stream bank restoration, stream bed management, pesticide handling and application and heavy equipment operation.

The Office of Mine Reclamation (Department of Conservation) staff that will be involved in the project include Gail Newton (Senior Reclamation Specialist) with over 19 years experience in revegetation, restoration and biostatistics, Mary Ann Showers (Environmental Specialist III) with over 15 years experience in plant ecology and revegetation and Michael Tuffly with over ten years experience in Geographic Information Systems (GIS)

The environmental consulting firm of Jones and Stokes Associates will participate in the project, headed by Ron Unger, a restoration ecologist who has been actively involved with Team Arundo del Norte, a regional group promoting control of *Arundo*, and Gus Yates a hydrologist with extensive experience on Cache Creek

The Yolo County Department of Planning and Public Works, with David Morrison, Resource Manager, is in charge of implementing the county's Cache Creek Area Plan and has many years experience in environmental planning and permitting.

MONITORING AND DATA EVALUATION

Monitoring includes measurements of vegetation and ecosystem responses to various treatments for removal and post-removal management. These data will be analyzed using parametric statistics (ANOVA), wherever feasible. Results will be compared/contrasted with data on *Tamarix* and *Arundo* eradication and monitoring from other riparian ecosystems. Peer review will be provided through the California Exotic Pest Plant Council and Joe DiTomaso, Ph.D., UC Davis Cooperative Extension, Non-crop Weed Ecologist. Monitoring changes in native and nonnative species will be determined by aerial photography and analyzed through the use of a Geographic Information System (GIS). This monitoring will extend beyond the life of the grant as part of the Cache Creek Conservancy's and Yolo County's efforts to improve creek habitat.

LOCAL SUPPORT/COORDINATION WITH OTHER PROGRAMS/ COMPATIBILITY WITH CALFED OBJECTIVES

The proposed project is the product of meetings of the *Tamarix* and *Arundo* working committee, composed of members from the larger Cache Creek Stakeholders Group (ERPP p. 342). In addition to the principal collaborators from Cache Creek Conservancy, Office of Mine Reclamation (Department of Conservation), Jones and Stokes Associates and the Yolo County Planning and Public Works Department, other local supporters include Assembly Member Helen Thomson, Yolo County Flood Control and Water Conservation District, Natural Resources Conservation Service, Yolo County Resource Conservation District, the Yolo County Agricultural Commissioner and many Cache Creek landowners, See Attachment C fpr letters of support.

Tamarix and *Arundo* are both highly invasive weeds that have been specifically targeted by CALFED for removal on Cache Creek. "**Of particular importance is the control of the spread of tamarisk and giant reed, two introduced species that displace native flora, offer marginal value to fish and wildlife, and cause channel instability and reduced floodway capacity." (SPER, p.44)**

PROJECT DESCRIPTION

PROPOSED SCOPE OF WORK

We propose to a) document the extent of the *Tamarix spp.* and *Arundo donax* invasion, b) implement an abatement/revegetation project to remove, chemically treat and revegetate portions of 550 acres along 35 linear miles dominated by *Tamarix* and *Arundo*, compare mechanized and manual removal techniques, and determine efficient revegetation techniques with native species where needed, c) monitor the vegetation and ecosystem responses to abatement, d) develop recommended protocols for *Tamarix* and *Arundo* control to be used by landowners in Cache Creek and other watersheds, and e) implement a community education program to explain the adverse effects of *Tamarix* and *Arundo* and how individual landowners can help control the spread of invasives and maintain streambank stability using the removal and revegetation methods stated above. The Cache Creek Conservancy and its collaborators recognize the great damage non-native invasive plant species (NIS) like *Tamarix* and *Arundo* can inflict on a riparian ecosystem. Parallel eradication efforts of both species are essential to their control in the Cache Creek watershed.

Tasks and Approaches (1-12)

1. **Project Management/Coordination:** The Cache Creek Conservancy will provide all technical and administrative services to assure that all contract tasks are completed within budget and on schedule. These include: general administration, accounting, budgeting, task coordination, interface with other contractors, subcontractors, project review, and quarterly and final reporting. ***Deliverables:*** All quarterly progress reports and a final report that will provide a cost estimate for eradication and maintenance, an analysis of all data, and decision-making guidelines for a cost-effective, watershed-wide treatment strategy.

PHASE 1- PRELIMINARY ASSESSMENT AND PREPARATION

2. **Vegetation Mapping:** Mapping is critical to assess watershed-scale distribution and invasion patterns of non-indigenous invasive species and to prioritize areas for NIS abatement along Cache Creek. While *Tamarix* is discernable in close-scale aerial photos taken during bloom, *Arundo* is not reliably distinguished in these photos, especially when mixed with other vegetation. Therefore, we will focus on aerial mapping for *Tamarix* only. The extent of *Tamarix* infestation in the 35 mile riparian zone from Ramsey to Yolo will be delineated using existing color aerial photographs. The delineated air photos will be scanned, vectorized and georeferenced, and put into a GIS. ***Deliverables:*** a GIS map and dataset depicting the extent of the *Tamarix* infestation in the 35 mile project area.

3. **Reach Characterization and Site Assessment**:

3.1 Bank Stability Characterization: Permanent transverse and longitudinal cross-section lines will be established at each location selected for treatment. The section lines will extend beyond the treatment plot into undisturbed adjoining areas that will serve as controls for statistical evaluation of scour, erosion, and bank erosion rates. Ground surface elevation profiles will be surveyed along the section lines prior to implementing the abatement/revegetation program. ***Deliverables:*** pre-abatement/streambank stability data

3.2 Vegetation Analysis: As part of the pre-implementation monitoring, abatement sites and native and infested reference sites will be characterized, vegetation conditions at abatement sites, including species composition, cover, density, height and vigor. ***Deliverables:*** pre-abatement/vegetation data

4. **Site Selection and Formal Agreements with Property Owners**:

4.1 Site Selection: Within each reach, sites will be selected based upon the following criteria: 1) Property owner's written agreement for participation; 2) Compatibility with design criteria; 3) Access; 4) Off-site and third party considerations (proximity to organic farms, unusually dense *Tamarix* and *Arundo* stand adjoining, etc.) ***Deliverables:*** a list and map representative of sites for abatement and revegetation

4.2 Formal agreements: General letters of permission for work have been obtained and are included in Attachment D. Formal agreements will be completed after specific site selection has been determined and before work begins to prevent possible removal of native revegetation or interference with the demonstration sites. ***Deliverables:*** formal agreements with landowners

5. **Selection and Baseline Data Gathering for Intensive Monitoring**: Within each site selected for the abatement program, a much smaller subset of plots selected for homogeneity will be monitored intensively before, during and after the treatments in Task 8. In plots of a size and number to result in an 80% confidence level and a 90% precision level (estimated to be approximately 15 plots per site of 1 to 5 square meters) we will monitor soil chemistry, species composition, species age class, species density and cover, and qualitative descriptors of erosion. ***Deliverables:*** sites and baseline data for intensive monitoring project

6. **Permitting**: Permits will be required for the following activities: 1) Pesticide permits will be obtained from the Yolo County Agricultural Commissioner, for pesticide application in the removal and maintenance of *Tamarix and Arundo*, before work begins,2) Where *Tamarix* and *Arundo* will be removed through stumping, the brush will be piled up and burned on site, which will require the prior approval of burn permits from the Yolo-Solano Air Quality Management District, 3) If necessary, a 1600 permit will be obtained from the Dept. of Fish and Game, and 4) All appropriate CEQA environmental documentation will be certified in compliance with state requirements. ***Deliverables:*** all appropriate permits and environmental documents

7. **Propagation of Native Species:** Propagules from native riparian species will be collected to be used for revegetation. This task must take place during the correct season for each species and for each type of propagule; therefore, scheduling will remain flexible. Some plants will be grown by the California Department of Forestry Nursery in Davis. ***Deliverables:*** plants for revegetation after NIS removal

PHASE 2: REMOVAL AND REVEGETATION

8. **Tamarix and Arundo Abatement and Revegetation Project:** We propose to undertake a significant abatement and revegetation project to determine the most cost-effective and efficient means of controlling NIS. We estimate that there are about 1,000 acres of riparian habitat along 35 miles of Cache Creek between Rumsey and Yolo that have heavy infestation of *Arundo* and/or *Tamarix*. We will implement an invasives removal/revegetation project on approximately110 acres along14 linear miles. Cutting and treatment with herbicide is now the demonstrated method for control, but within that regime there are different removal, treatment and revegetation methods. See Table 1 for an outline of the project design.

8.1 Removal: A comparison of various removal techniques. ***Deliverables:*** a per acre cost estimate for each removal technique

8.2 Treatment: A comparison of various herbicide treatment techniques. ***Deliverables:*** an estimate of the most effective and cost-effective herbicide treatment method

8.3 Revegetation: A comparison of various revegetation techniques. ***Deliverables:*** a comparison of costs and efficacy of the methods

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TABLE 1. ABATEMENT AND REVEGETATION DESIGN

Removal Methods	Herbicide Treatment Methods	Revegetation Methods	Re-Treatment Methods
Mechanized: using tractor-mounted hammer flail mulcher and/or excavator-mounted cutter. All vegetation mulched in place.	1. Clear cut NIS, treat cut stumps 2. Selective cutting, cut and treat stumps; leave open space for revegetation with remaining NIS untreated for erosion control	1. Active reveg., with irrigation on erodible sites within riparian zone and in selective cutting areas 2. Active reveg. without irrigation 3. Natural reveg.	1. Clear cut stumps, treat regrowth 2. Selective cutting, treat regrowth and remove all remaining NIS, and treat newly cut stumps
Manual: using hand-held equipment. Vegetation piled by hand and burned or mulched	1. Clear cut NIS, treat cut stumps 2. Girdle trunk, treat girdled area 3. Basal bark, treat base of uncut stump For 2 and 3 leave treated NIS standing for erosion control 4. Selective cutting, cut and treat stumps	same as above	1. Treat regrowth of clear cut, girdle trunk and basal bark treatments 2. For selective cutting treat regrowth and remove all remaining NIS, and treat newly cut stumps
Combined mechanized and manual: mechanized removal to greatest extent possible and manual removal of remainder	same as above	same as above	same as above

I-019848

PHASE 3: MONITORING AND DATA ANALYSIS

9. Monitoring: The purpose of our monitoring is to document the following: 1) the response of the ecosystem to the removal techniques; 2) the level of intervention necessary for recovery of the native ecosystem; 3) the effect of treatments on the erosion potential of the site; and 4) the costs of removal and intervention compared with results (cost/benefit analysis).

9.1 Bank Stability: Ground profiles along the transects established in Task 3.1 will be resurveyed at the end of the third year to compare with deposition, scour and bank retreat rates in the adjoining control areas. **Deliverables:** data for evaluation in Task 10

9.2 Vegetation: Abatement/revegetation sites will be resampled annually for two years following the baseline monitoring and subsequent treatments to determine treatment success in controlling *Arundo* and *Tamarix* and revegetating with native species. **Deliverables:** data for evaluation in Task 10

9.3 Intensive Monitoring: The study plots in Task 5 will be monitored on the following schedule: horticulture 7 times in year one and vegetation, erosion, and soil chemistry 2 times/year. **Deliverables:** data for evaluation in Task 10

9.4 Vegetation Mapping: At the end of the third year a subset of new color aerial photos will be prepared as in Task 2, so that we can monitor pre- and post- abatement and revegetation sites and compare them with similar sites that were not part of the abatement program. **Deliverables:** data for evaluation in Task 10

10. Data Analysis and Peer Review: All data will be analyzed as presented in "Monitoring and Data Collection Methodology".

PHASE 4: PUBLIC EDUCATION

11. Public Education: An essential component of any *Tamarix* and *Arundo* control program is community, and particularly creekside landowner, support. Concurrent with our experimental project we will initiate an educational program that will include public forums, local media coverage, pamphlets, articles in agricultural magazines and on-site visits with landowners to discuss the risks of *Tamarix* and *Arundo* invasion, how to remove it, and what the replacement alternatives and costs are. The results of the proposed project will be incorporated into a decision-making guide that will be disseminated throughout the watershed. ***Deliverables:*** brochure, media coverage, public meetings, landowner's guide to *Tamarix/Arundo* control and management.

LOCATION OF THE PROJECT: The project will be located in Yolo County in the Cache Creek watershed between the town of Yolo and the Capay dam, with a secondary emphasis on sites near the town of Rumsey. See Map in Attachment A.

I-019849

ECOLOGICAL/BIOLOGICAL BENEFITS

ECOLOGICAL/BIOLOGICAL OBJECTIVES

This proposal has four objectives:

- eradicate *Arundo* and *Tamarix* in the project sites
- revegetate of removal areas by native species
- ascertain best methods of NIS removal/revegetaton to maintain bank stability
- develope a protocol for cost-effective and efficient removal/revegetation and ongoing management of *Arundo* and *Tamarix*

Several recently completed Cache Creek environmental reports recommend immediate control of *Arundo* and *Tamarix* along the creek (US Army Corps of Engineers 1995, US Fish and Wildlife Service 1995, Yolo County Community Development Agency 1995). Given this technical mandate, members of the Cache Creek Stakeholders Group formed a working group to stimulate awareness of the need to control these invasive weeds, and this proposal is a result of their concerns. Successful management plans for NIS eradication and replacement have been implemented in the southwestern US and southern California (Barrows 1993, Sudbrock 1993, Neill 1997), providing ample precedent and technical support for the feasibility of our objectives.

The project will benefit the following:

Priority Habitats: The project will focus on improving riparian areas associated with Cache Creek, including: instream aquatic habitats, shaded riverine aquatic habitats, and seasonal wetland and aquatic habitats.

Priority Species: The project is expected to benefit a number of key and priority species, including the following:

Migratory Birds: Tamarix and Arundo eradication will improve habitat for migratory birds. As *Tamarix* replaces native vegetation, breeding densities of riparian bird species declines (DiTomaso 1997). Waterfowl, frugivores, and insectivores almost completely avoid *Tamarix* (Shrader 1977; Brotherson and Field 1987; Kerpez and Smith 1987).

Swainson's Hawk: Cache Creek has one of the largest concentrations of Swainson's hawk nest sites in California. One of the critical concerns for this species is the lack of nesting trees. *Tamarix and Arundo* provides no nesting opportunities, while cottonwood and willow forests greatly enhance the number of potential nest sites.

Bank Swallows: Other than cicadas and bees, very few insect species are known to use *Tamarix* as cover or forage (Egan et al.1993). Replacement of *Tamarix and Arundo* with native riparian species will increase the density and diversity of insects along Cache Creek, which will provide improved food supplies for nesting bank swallows and other migratory insectivores.

Native Resident Fish and Amphibians: Reestablishing cottonwood and willow communities will increase shaded habitat and improve the availability of insects for native fish species, yellow and red-legged frogs and western pond turtles.

Primary Stressors: Once widely recommended for use in erosion control, *Tamarix* and *Arundo* have become increasingly recognized as highly destructive species that result in a wide range of adverse environmental impacts, as follows:

Alteration of Flows: Effective *Tamarix* and *Arundo* control would provide additional water supplies

for riparian habitat and wildlife located downstream.

Channel Form Changes: The erosion resistant nature of *Tamarix* and *Arundo* encourages sediment deposition, which narrows the watercourse and increases flow velocity (DiTomaso 1997).

Decreased Water Quality: The management of *Tamarix*, which deposits salts on the soil, will reduce both the amount of salt being introduced into the watershed and its potential impact on freshwater species (Kerpez and Smith 1987).

Undesirable Species Interactions: *Tamarix* and *Arundo* infestation has serious consequences for the long-term survival of cottonwood-willow communities by severely limiting the number of germination sites for native riparian species. Reestablishing cottonwood-willow communities will greatly increase the amount of shade along Cache Creek.

Increased Wildfire Potential: Removal of *Tamarix* and *Arundo* decreases the potential for wildfire along Cache Creek, especially in the Capay Valley which is designated as a State High Fire Risk Area.

Primary and Secondary Benefits: *Primary Benefits*: 1) Reduce the populations of invasive non-native plant species; 2) Increase habitat values for riparian associated wildlife; 3) Improve the natural reestablishment and succession of native riparian vegetation in floodplains; and 4) Decrease channel flow restrictions.

Secondary Benefits: 1) Increase shaded riverine aquatic habitat for fish; 2) Protect, restore, and maintain watershed health; 3) Develop cooperative approaches to land management; 4) Increase water availability; 5) Improve surface water quality; and 6) Reduce wildfire potential.

Potential Benefits to Third Parties: This project offer great benefits to numerous organizations and individual landowners. See "Local Involvement".

Benefits to Other Ecosystem Restoration Programs: This project is compatible with and will actually implement portions of the Yolo County Cache Creek Resources Management Plan, the U.S. Army Corps of Engineers Cache Creek Environmental Restoration Plan, and the goals of the Cache Creek Conservancy. It will also work in tandem with other weed eradication efforts, such as those of Team Arundo del Norte and Yolo County Flood Control and Water Conservation District.

Scientific Hypothesis: We can develop a protocol for cost-effective *Tamarix* and *Arundo* control, riparian habitat restoration and long-term NIS management that can be implemented on Cache Creek and will serve as a model for other watersheds and thus offer protection to the Bay-Delta.

Durability of Benefits of Project: By the end of this project, landowners will have become aware of the dangers of invasive weeds and have the information available to continue monitoring and managing *Tamarix* and *Arundo* on their properties. The benefits of the project will endure with long-term monitoring and continued landowner education. The Cache Creek Conservancy and Yolo County are committed to continuing the monitoring and public outreach regarding non-native invasives to help protect the Cache Creek ecosystem. At the end of the project *Tamarix* and *Arundo* populations will be greatly reduced, native vegetation greatly increased and biocontrol will have been implemented (see "Linkages") in order to maintain NIS populations at a manageable level. This integrated pest management approach may allow perpetual control.

LINKAGES

In 1997 a *Tamarix* sub-committee of the Cache Creek Stakeholders Group was formed. A *Tamarix* removal and revegetation proposal was submitted to CALFED by this group, headed by the Cache Creek Conservancy. The proposal was not funded but carried over to the second solicitation round and then

not funded. Now two years later it was decided that *Arundo* was just as destructive on Cache Creek as *Tamarix*, and it has been included in this new proposal.

In an effort to attack these invasives on all fronts, the Cache Creek Conservancy is also collaborating with scientists on control research. We are working with Dr. Ray Carruthers of the USDA-ARS Exotic and Invasive Weed Research Unit and will provide several test sites along Cache Creek for a *Tamarix* feeding leafbeetle that has been through extensive laboratory trials. Phase one will monitor caged leafbeetles on *Tamarix* along the creek and Phase Two will monitor limited releases of the insects. The Conservancy is also working with Dr. Joe di Tomaso, the Non-crop Weed Ecologist at UC Davis Extension to test a new herbicide, Stalker, on *Tamarix*. For *Arundo* the Conservancy is partnering with Dr. David Spencer, at the USDA Exotic and Invasive Weed Research Unit, UC Davis on various *Arundo* control research projects.

CALFED's "Strategic Plan for Ecosystem Restoration"(February 1999) lists as it 5th goal "Prevent establishment of additional non-native species and reduce the negative biological and economic impacts of established non-native species "(p. 27). This goal is specifically addressed for Cache Creek in the Sacramento River Basin section: Action 1 under "Cache Creek Stage 1 Actions" is "Control or eradicate non-native riparian plants and re-vegetate with native plants." (p. 83). In Volume 1 of the "Ecosystem Restoration Program Plan, Vision for Invasive Riparian and Marsh Plants" (February 1999) it is stated that both *Tamarix* (p. 473) and *Arundo* (p.472) are highly destructive to riparian ecosystems and pose a threat to the Bay-Delta. For both plants the document emphasizes that more survey mapping is needed to determine the extent of the infestation, more work should be done on how best to safely control it, and a prioritized strategy for removal should be developed. Volume 2 of the "Ecosystem Restoration Program Plan" under "Yolo Basin Ecological Management Zone Vision" (February 1999) also speaks to the need for control of these two species specifically on Cache Creek: "Major efforts are required to control or eradicate tamarisk and giant reed infestations which interfere with natural vegetation succession by native tree species"(p.342).

SYSTEM-WIDE ECOSYSTEM BENEFITS

The proposed project clearly addresses the CALFED goals and objectives of NIS reduction and will provide a working model to be implemented in other watersheds to help realize the ultimate CALFED objective of a healthy Bay-Delta ecosystem.

COMPATIBILITY WITH NON-ECOSYSTEM OBJECTIVES:

Provide Good Water Quality: *Tamarix* secretions include magnesium, aluminum, sulfur, boron, copper, chloride, silica, zinc, lithium, barium, and numerous other constituents (Story and Thomson 1994). A reduction in the amount of *Tamarix* would allow potential contaminants to remain in the soil layer and would inhibit their introduction into the watershed.

Reduce Disparity Between Water Supplies and Beneficial Uses: *Tamarix* and *Arundo* draw moisture from the saturated zones below the water table and are capable of extracting moisture from the less saturated zones in areas with deeper water tables (Ball et al. 1994; Gay and Hartman 1982).

Reduce the Risk From Failure of Delta Levees: Sediment deposition associated with *Tamarix and Arundo* can substantially reduce channel capacity, increasing the potential for levee overtopping and subsequent failure. A program to control *Tamarix* and *Arundo* upstream would reduce the potential for infestation in the Delta.

TECHNICAL FEASIBILITY AND TIMING

Other Alternatives Not Selected

The ideal approach to NIS removal is to begin at the top of a watershed and work down. The scope and cost of such a strategy make a total watershed approach almost impossible, and there were many impediments to start at the top of the Cache Creek watershed. Because our approach is to develop the most cost effective and efficient eradication methods, we chose to focus on the 14 miles of lower Cache Creek where we have landowner permission and access. The Bureau of Land Management is in the process of purchasing riparian land in the upper watershed and have indicated that they will use our program as a model when their land becomes available.

Three other alternatives for eradication were considered and rejected. They were:

1) fire- This method was discounted because nearly all the NIS stands include native species.
2) bulldozing-This was rejected because it is so disruptive to bank stability and would also result in loss of native vegetation too.
3) aerial spraying- This method was inappropriate for Cache Creek because of mixed NIS and native stands and because of the proximity of crops to the riparian zone.

Permitting:

The following approvals will be obtained prior to the commencement of abatement:

1) Pesticide permits. The application of herbicides to cut *Tamarix* and *Arundo* will require permit approval from the Yolo County Agricultural Commissioner. Licensed PCA's and PCO's will be involved throughout the abatement process to ensure compliance.

2) Burn Permits. The majority of cut *Tamarix* and *Arundo* brush will be mechanically mulched and removed from the scream channel. In areas where mechanized removal is not possible, crews will pile the cut vegetation and burn it on site. Agricultural burn permits will be obtained from the Yolo-Solano Air Quality Management District. Burns will be coordinated with local fire district officials.

3) Steam Alteration Agreement. The mechanized removal of non-native species may result in minor disturbances to the streambed and banks. Removal within the lower watershed will comply with the existing 1600 Permit issued to Yolo County. New permits will be obtained from the Department of Fish and Game for work within the channel in the Capay Valley.

4) CEQA/NEPA Compliance. The restoration of natural habitat through the eradication of NIS and subsequent revegetation with native species is considered to be categorically exempt from CEQA. No significant adverse environmental impacts will result from the activities proposed within this grant. It is not anticipated what NEPA compliance will be required, however, appropriate documentation will be prepared if necessary.

5) Local General Plan Compliance. The removal of *Tamarix* and *Arundo* is explicitly supported in the Yolo county Cache Creek Resource Management Plan and is consistent with all local zoning.

Other Outstanding Implementation Issues:

One of the most difficult implementation issues is the resistance of some landowners to removal of *Tamarix* and *Arundo*, due to their bank holding capacity or perceived attractiveness. Our approach to overcome this is a strong public education program. See Task 11 for details.

I-019853

MONITORING AND DATA COLLECTION METHODOLOGY

BIOLOGICAL/ECOLOGICAL OBJECTIVES

See "Ecological/Biological Objectives" in the "ECOLOGICAL/BIOLOGICAL BENEFITS" section. Also see Table 2 for objectives, questions, monitoring parameters, and data evaluation approach.

MONITORING PARAMETERS AND DATA COLLECTION APPROACH

NIS Removal/Revegetation: *Tamarix* in the entire project area (Rumsey to Yolo) will be mapped in a GIS and compared with a smaller mapping subset at the end of three years to determine extent of the invasion, rate of expansion, and amount removed. Species composition, absolute cover, density, height and vigor will be monitored in the field over the entire treatment unit prior to the initial vegetation removal and 2 years following the removal and subsequent revegetation. This will be done using sampling methods appropriate to the parameter being measured and the treatment unit size. In addition a statistically valid number of plots selected for homogeneity (estimated to be approximately 15 plots per site of 1 to 5 square meters) will be monitored intensively before, during and after the treatments in Task 8. Locations will be documented by GPS.

Maintenance of Bank Stability: Bank erosion and the effects of sediment scour and deposition will be monitored by surveying ground surface profiles along permanent transect lines at each treatment area. The transects will include treated and adjacent untreated areas. Surveys will be done prior to vegetation removal and 2 years after removal. Soil chemistry will be monitored over the 3 years in the intensive monitoring plots. Samples will be sent to a laboratory for analysis. The small plots will also yield qualitative descriptions of erosion over the life of the project.

Cost Effectiveness: All person-hours, work performed, and other costs, along with the date of treatment will be recorded for all activities related to removal and revegetation. These will be recorded beginning with initial treatments in year one, and ending in the third year.

DATA EVALUATION APPROACH

NIS Removal/Revegetation: Baseline and post-treatment cover, density, height, and vigor by native woody riparian vegetation, *Arundo*, and *Tamarix* will be compared between treatment sites to determine the efficacy of treatment and revegetation strategies in terms of controlling *Arundo* and *Tamarix* and restoring woody riparian vegetation. The intensive monitoring plots will yield statistically significant data.

Maintenance of Bank Stability: Baseline and post-treatment ground surface profiles will be compared to identify any changes in channel bank slopes and locations. Total and net scour and deposition will be calculated by tabulating the amount of increase or decrease in ground surface elevation at closely-spaced intervals along the profiles. The distributions of changes in point elevations for treated and untreated areas will be evaluated for statistically significant changes in mean and standard deviation. Bank stability and vegetation data will be analyzed together to determine which treatments were most successful in meeting both the erosion control and habitat restoration objectives.

Cost Effectiveness: The costs for each removal and revegetation treatment will be compared with the resulting success of each in terms of controlling *Arundo* and *Tamarix*, restoring native vegetation, and providing protection against bank erosion (when needed).

All results will be sent out for peer review to CA Exotic Pest Plant Council, Team Arundo del Norte, Dr. Joe de Tomaso (UC Davis Non-crop Weed Ecologist), and any other qualified reviewer. The resulting additions/comments/corrections will be incorporated into the final project report.

TABLE 2. MONITORING AND DATA COLLECTION INFORMATION

Question to be Evaluated	Monitoring Parameters & Data Collection Approach	Data Evaluation Approach
Objective: ***To Eradicate Tamarix and Arundo***		
Which method(s) of removal and treatment are most effective?	Compare the efficacy of various removal and treatment techniques	Trend analysis
Objective: ***To Revegetate with Native Species***		
Is manual revegetation necessary or will native species naturally fill in after NIS removal?	Compare active revegetation plots with passive revegetation plots	Statistical analysis
Objective: ***To Maintain Bank Stability after NIS Removal/Revegetaton***		
Which removal/treatment/ revegetation regime best maintains streambank stability?	Compare removal/treatment/ revegetation regimes for effect on bank stability	Trend analysis
Objective: ***To Develop Guidelines for Cost-effective Removal/Revegetation***		
What is the most cost effective means to remove NIS and re-establish healthy riparian and riverine habitats?	Compare costs of methods for: 1) removal 2) treatment 3) revegetation	Cost-benefits analysis

I-019855

LOCAL INVOLVEMENT

Yolo County

The Yolo County Department of Planning and Public Works is an active partner in this proposal (see attached county notification letter), and David Morrison of that office presented the proposal to the Board of Supervisors at their April 6th meeting (see attached letter of support from the Yolo County Board of Supervisors). See Attachment D for letter of notification to Yolo County.

Local Organizations

Other letters of support for this project have been provided in Attachment C. An effective *Tamarix* and *Arundo* control program requires outreach to landowners throughout the watershed. We will be assisted in this effort by local agencies including the Yolo County Agricultural Commissioner, the Yolo County Resource Conservation District, the Natural Resources Conservation Service, and Yolo County Flood Control and Water Conservation District.

Public Outreach

Local landowners and organizations are currently kept informed of activities on lower Cache Creek through *Meanderings*, a quarterly publication sponsored by the Cache Creek Conservancy and Yolo County. We will use both newsletters and public meetings to keep people informed about progress on the project. See Phase 4, Task 11 for more detail on the educational outreach component.

Landowner Permission

Letters of permission from landowners are found in Attachment D. The five gravel companies that own land along the creek, the County of Yolo and several private land owners have indicated a willingness to participate in the proposed project.

Third Party Impacts

The proposed grant will positively impact the following local projects:

-The Cache Creek Stakeholders, the local group which initiated the proposal process.
-A *Tamarix* control program to be initiated by the U.S. Bureau of Land Management in the upper watershed.
-Ongoing channel maintenance activities undertaken by the Yolo County Flood Control and Water Conservation District.
-Efforts by the U.S. Natural Resources Conservation Service, the Yolo County Resources Conservation District, and the Yolo County Agricultural Commissioner to educate landowners along the creek regarding the problems of *Tamarix* and *Arundo*.
-The Cache Creek Environmental Restoration Study, administered by the U.S. Army Corps of Engineers, to restore riparian habitat in the lower watershed.

COSTS

BUDGET

Amount Requested

The total budget request is $968,700.

Explanation of Cost Breakdown Table

See Table 3 for the total budget request, and Table 4 for the quarterly budget..

SCHEDULE

The tasks in the budget are ordered chronologically, although Task 1 Project Management and Task 11 Public Education will run throughout the life of the three year project. See Table 5.

COST-SHARING

Although no matching funds are included, we are providing several services/products which will directly benefit the proposal, including:

Item	Replacement Value
portable surveying station	$15,000
primary Arc/Info Machine	$25,000
secondary Arc/Info Machine	$20,000
ArcView Machines (x3)	$18,000
real-time GPS	$12,000
post-process GPS	$ 9,000
digital cameras (x3)	$ 3,000
laser rangefinders (x2)	$20,000
digitizing tables (x2)	$30,000
soil equipments (x9)	$ 1,200
aerial photos of Cache Creek (2 years)	$ 2,400
TOTAL VALUE	$155,600

I-019857

TABLE 3. COST BREAKDOWN

TASK	Direct Labor Hours	Direct Salary and Benefits	Service Contract PIS	Service Contract DOC	Service Contract JSA	Service Contract CCC, CDF, YC	Material & Acquisition Costs	Miscellaneous & Other Direct Costs	Overhead & Indirect Costs	Total Cost
1. Project Manag/ Coordination	1000	30,000							27,000	57,000
2. Vegetative Mapping	20	600		50,000			5,000			55,600
3. Reach Characterization										
3.1	60	1,800			11,000					12,800
3.2	30	900			9,000					9,900
4. Site Selection										
4.1	80	2,400								2,400
4.2	120	3,600								3,600
5. Baseline-Inten. Monitoring	30	900		24,000						24,900
6. Permitting	10	300				4,000				4,300
7. Propagation of Native Species	150	4,500				24,000				28,500
8. Abatement and Revegetation										
8.1	800	24,000	258,000		5,000	25,000				312,000
8.2	800	24,000	190,000		5,000					219,000
8.3	800	24,000			5,000	25,000	10,000			64,000
9. Monitoring & Data Evaluation										
9.1	30	900			16,000					16,900

TASK	Direct Labor Hours	Direct Salary and Benefits	Service Contract PIS	Service Contract DOC	Service Contract JSA	Service Contract CCC, CDF, YC	Material & Acquisition Costs	Miscellaneous & Other Direct Costs	Overhead & Indirect Costs	Total Cost
9.2	30	900			25,000					25,900
9.3	30	900		58,500						59,400
9.4	30	900		15,000						15,900
10. Data Analysis	100	3,000		12,000	10,000					25,000
11. Public Education	420	12,600			4,000		15,000			31,600
TOTALS	4,540	136,200	448,000	159,500	90,000	78,000	30,000		27,000	968,700

Table 3. Cost Breakdown Table continued

PIS= Pestmaster Services, Inc.
DOC= Department of Conservation
JSA= Johns & Stokes Associated
CCC= CA Conservation Corps
CDF= CA Department of Forestry
YC= Yolo County

TABLE 3a

Subcontract	Total Federal	Total State
CA Department of Conservation	159,500	146,740

This table gives the differences in DOC's total funding request based on differences between federal and state overhead percentages. The federal amount was used in Table 3

I-019859

TABLE 4. QUARTERLY COST BREAKDOWN

Task	Year 1				Year 2				Year 3				Total
Quarter	*1st*	*2nd*	*3rd*	*4th*	*1st*	*2nd*	*3rd*	*4th*	*1st*	*2nd*	*3rd*	*4th*	
1. Project Manag/ Coordination	9700	3500	3500	3800	3400	7000	3700	3500	3400	8500	3700	3300	57,000
2. Vegetative Mapping		55600											55,600
3. Reach Characterization													
3.1		12800											12,800
3.2		9900											9,900
4. Site Selection													
4.1		2400											2,400
4.2			3600										3,600
5. Baseline-Inten. Monitoring		12800				12100							24,900
6. Permitting			2100				1100				1100		4,300
7. Propagation of Native Species				7,200	7,100			7,100	7,100				28,500
8. Abatement and Revegetation													
8.1	3000	3000	76300	73700		3000	77800	73700		1500			312,000
8.2			45000	47500			46500	47500		1500	26500	4500	219,000
8.3			10000	7800	15200	4000		9300	15200	2500			64,000
9. Monitoring & Data Evaluation													
9.1					1100				1100	8800	5900		16,900

Task	Year 1				Year 2				Year 3				Total
9.2						5200				5200	15500		25,900
9.3		12900	9000		1300	11700	9000		1300	7700	6500		59400
10. Data Analysis and Peer Review		1800	1800			1800	1800			1800	16000		25,000
11. Public Education	300	300	300	300	300	1200	300	300	300	1200	1800	25000	31,600
TOTALS	13,000	115,000	151,600	140,300	28,400	46,000	140,200	141,400	28,400	54,600	77,000	32,800	968,700

I-019861

TABLE 5. TASK START AND COMPLETION DATES

PROJECT TASK	RESPONSIBLE PARTY	START DATE	FINISH DATE
1. Project Manag/ Coordination	Cache Cr.	01/00	12/02
2. Vegetative Mapping	DOC	01/00	06/00
3. Reach Characterization			
3.1	JSA	04/00	07/00
3.2	JSA	04/00	07/00
4. Site Selection			
4.1	Cache Cr.	04/00	07/00
4.2	Cache Cr.	04/00	07/00
5. Baseline-Inten. Monitoring	DOC	01/00	04/01
6. Permitting	YC	09/00	11/01
7. Propagation of Native Species	CDF	04/00	11/01
8. Abatement and Revegetation			
8.1	Cache Cr., PSI, CCC, JSA	07/00	12/01
8.2	Cache Cr., PSI, JSA	07/00	12/02
8.3	Cache Cr., CCC, JSA	10/00	12/02
9. Monitoring & Data Evaluation			
9.1	JSA	04/02	07/02
9.2	JSA	04/01	09/02
9.3	DOC	04/00	09/02
9.4	DOC	04/02	09/02
10. Data Analysis	DOC, JSA	04/01	09/02
11. Public Education	Cache Cr.	01/00	12/02

Cache Cr. = Cache Creek Conservancy
DOC = Department of Conservation, Office of Mine Reclamation
JSA = Jones & Stokes Associates
Yolo Co. = Yolo County Planning & Public Works
PSI = Pestmaster Services, Inc.
CCC = CA Conservation Corps
CDF = CA Department of Forestry (Davis Field Station)

I-019862

APPLICANT QUALIFICATIONS

ORGANIZATION OF STAFF

Staff of the Cache Creek Conservancy will be in charge of the project. They will assume responsibility for grant administration and overall project management. They will coordinate and oversee the subcontractors and implement the removal/revegetation and education portions of the grant. We are asking for exemptions from the subcontractor bidding process for the following due to their particular expertise and experience:

Yolo County Planning and Public Works Dept., David Morrison and **Department of Conservation Office of Mine Reclamation**, Gail Newton, have been active in the Cache Creek Stakeholders Group and the *Tamarix* and *Arundo* working group meetings from their inception and have participated fully in the proposal design and writing. Both have qualifications that make them uniquely suited for this particular project (see biosketches).

Jones and Stokes Associates has also been very active in Cache Creek. The firm played a vital role in developing biological recommendations for the Cache Creek Resource Management Plan, which serves as a guide for restoration projects on lower Cache Creek. Ron Unger has taken an active role in preparing this proposal and brings a wealth of experience dealing with NIS, and Gus Yates is very familiar with the hydrology of the creek (see biosketches)

Pestmaster Services, Inc. The removal/revegetation section of the proposal, which is the heart of the entire project, has been designed to utilize the unique services of Pestmaster. Pestmaster has 20 years experience with plant NIS removal (e.g. Angeles National Forest and Los Coches Channel Inlet in San Diego) and has pioneered mechanized removal techniques for *Arundo* and *Tamarix*.

California Conservation Corps has a solid history in NIS removal and revegetation. Yolo County sponsors a special local CCC, whose participants attend school for two hours and work in the field the rest of the day. The Board of Supervisors would like to see these young people utilized in our work.

CA Department of Forestry, Davis Field Office provides a local source for plant propagation

RESPONSIBILITIES OF APPLICANT AND SUBCONTRACTORS

Cache Creek Conservancy
- overall project management
- public education

Jones and Stokes Associates
- reach characterization
- site assessment
- data analysis

Yolo County, Planning and Public Works Dept.
- permitting
- liaison with Yolo County

Office of Mine Reclamation
- GIS-vegetation mapping
- intensive monitoring

Pestmaster Services, Inc.
- *Arundo/Tamarix* mechanized removal

California Conservation Corps
- manual NIS removal
- revegetation

CA Department of Forestry (Davis Field Office)
- plant propagation

I-019863

Biosketches

Ann Brice: Ann has been Executive Director of the Cache Creek Conservancy since its founding in January 1996. She has a strong background in project management. After receiving a Ph.D. in Ecology from UC Davis in the late 1980s, she became the Coordinator of the Psittacine (parrot) Research Project there, where, for seven years, she conducted research, supervised students and staff, edited a newsletter, and managed fund raising efforts. As the principal investigator of a US AID grant for parrot research in Guatemala, she designed protocols, managed staff, dealt with Guatemalan permits and authorities, and analyzed and published data. She received her undergraduate degree from Brown University in anthropology and a master's degree from Simmons College, Boston, in Urban Teaching.

Jan Lowrey: Jan Lowrey was a founding Board of Directors member of the Cache Creek Conservancy. In October 1998 he was hired as Projects Coordinator to oversee Conservancy operations. His fourth-generation farming background provides entree to local landowners and extensive understanding of Cache Creek history. Prior to joining the Conservancy he served as general manager of a 2,500-acre farming operation which required pesticide handler training, application and reporting, and ran his own streambank restoration business where he dealt with contractors, heavy equipment logistics and operation and re-vegetation strategies. He received his undergraduate degree in English Literature from U.C. Berkeley.

Gail Newton: Gail has almost 20 years experience in revegetation of California native habitats. She currently manages the Abandoned Mines Unit of the Office of Mine Reclamation in the California Department of Conservation. She was previously the Revegetation Specialist for the state. She was principal of a consulting firm for 10 years prior to entering state employment. Her firm specialized in revegetation of native habitats in northern California. She received her undergraduate degree in botany from U.C. Santa Barbara and her graduate degree in biology at Humboldt State University. Gail was the founding president of SERCAL (Society for Ecological Restoration, CA chapter) and regularly teaches SERCAL's class on revegetation/restoration planning, implementation and monitoring.

David Morrison: David is a co-author of the Cache Creek Resources Management Plan. As the Resource Manager for Yolo County, he oversees the Cache Creek Technical Advisory Committee and administers a variety of permitting, monitoring, and habitat restoration efforts. He previously worked as an environmental planner for Tulare County, where he was responsible for ensuring the adequacy of all CEQA documents prepared by staff and private consultants. David received his undergraduate degrees in economics and anthropology and a master's degree in city/regional planning from CSU Fresno.

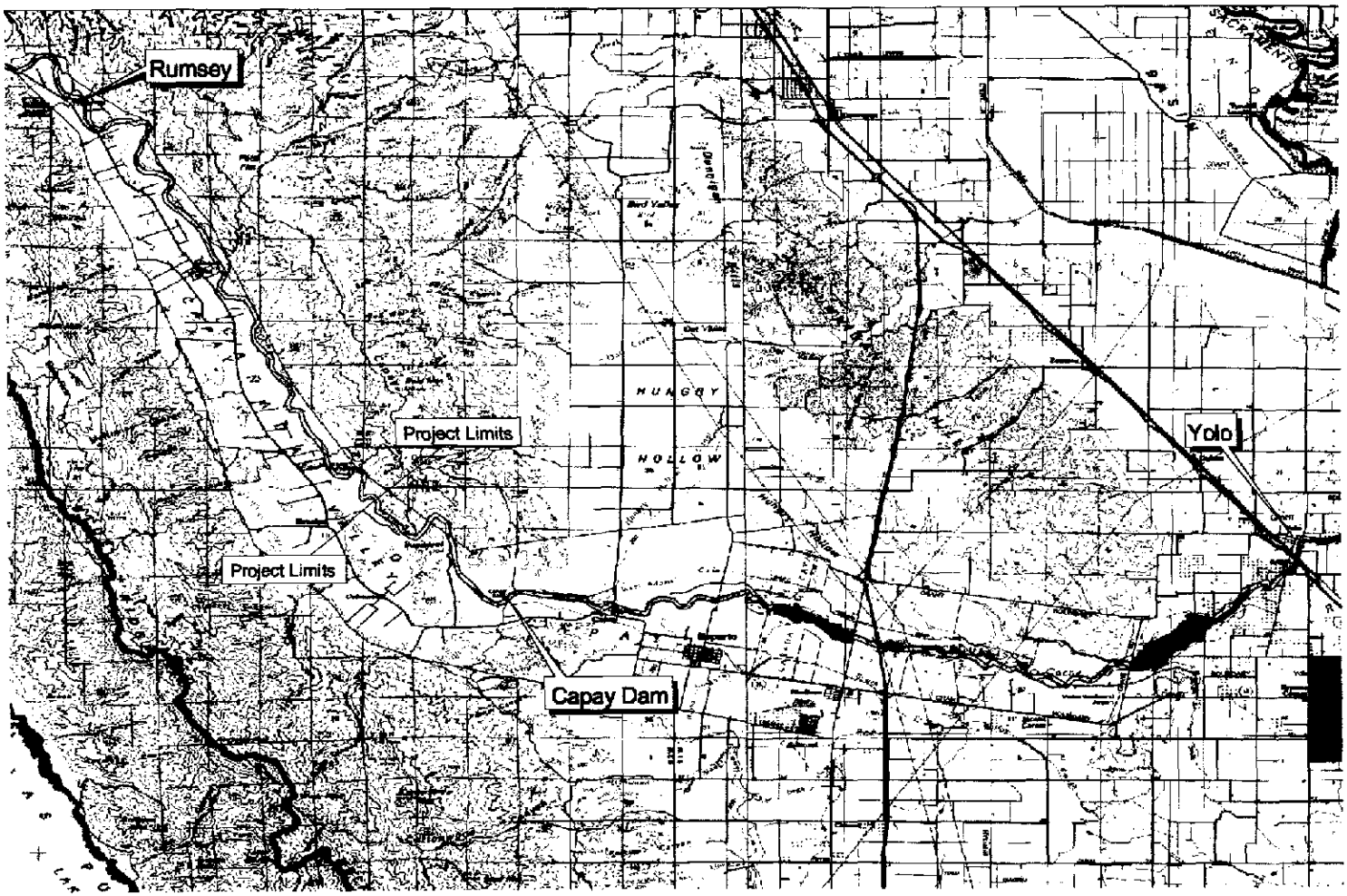
Ron Unger: Ron is a restoration ecologist, pest management specialist and botanist for Jones and Stokes Associates. He has assisted public agencies, municipalities, nonprofit organizations and private businesses in pest management and habitat restoration planning, and compliance with environmental regulations. He has a great interest in NIS removal and is an active member of Team Arundo del Norte. Ron received his undergraduate degree in psychology from the State University of New York, Potsdam and a master's degree in ecology from UC Davis.

Gus Yates: Gus is a certified professional hydrologist with over 16 years of experience specializing in groundwater and surface water flow modeling and interactions between groundwater, surface water, aquatic, wetland, and riparian habitats. He assisted the Yolo County Planning and Public Works Department as a third-party reviewer of technical hydrologic studies related in in-channel and off-channel gravel mining along Cache Creek and thus has extensive experience with the lower section of the creek.

COMPLIANCE WITH STANDARD TERMS AND CONDITIONS- See Attachment E Documents

ATTACHMENT A. Map of Cache Creek Study Area

I-019865



Attachment A: Proposed Project Boundary

I—019866

I-019866

ATTACHMENT B. Literature Cited

I-019867

Literature Cited

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ATTACHMENT C. Letters of Support

I-019869

STATE CAPITOL
P.O. BOX 942849
SACRAMENTO, CA 94249-0001
(916) 319-2008
FAX (916) 319-2108

SOLANO COUNTY
555 MASON STREET, SUITE 275
VACAVILLE, CA 95688
(707) 455-8025
FAX (707) 455-0490

YOLO COUNTY
712 MAIN STREET
WOODLAND, CA 95695
(530) 662-7857
FAX (530) 406-0770

e-mail
helen.thomson@assembly.ca.gov

website
http://www.assembly.ca.gov/thomson/

Assembly
California Legislature

HELEN MACLEOD THOMSON
ASSEMBLYWOMAN, EIGHTH DISTRICT
ASSISTANT SPEAKER PRO TEMPORE

CHAIR
SELECT COMMITTEE ON MENTAL HEALTH

CO-CHAIR
LEGISLATIVE ETHICS COMMITTEE

STANDING COMMITTEES
AGRICULTURE
APPROPRIATIONS
HEALTH
LOCAL GOVERNMENT
WATER, PARKS, AND WILDLIFE

SELECT COMMITTEES
CALIFORNIA PORTS
CALIFORNIA WINE
INDIAN GAMING
RURAL ECONOMIC DEVELOPMENT
SCHOOL FACILITIES FINANCE

April 13, 1999

Ann Brice, Executive Director
Cache Creek Conservancy
34490 County Road 25
Woodland, CA 95695

re: tamarisk and giant reed

Dear Ann,

I am pleased to write in support of the Conservancy's CalFed grant for work on Cache Creek. Cache Creek, which runs through the heart of Yolo County, plays an important role in regional resource planning. The riparian corridor associated with the creek is a critical link between the habitats of the Coast Range and those of the Sacramento Valley.

Tamarisk and giant reed (Arundo) represent a threat to the native vegetation that exists along the creek. Additionally, significant potential exists for tamarisk and giant reed to spread into the Yolo Bypass and affect the Yolo Basin Wetlands Project, as well as other downstream environments in the Sacramento-San Joaquin Delta.

As a member of the Yolo County Board of Supervisors, I was an active participant in the development of the Cache Creek Resources Management Plan (CCRMP), which encourages the removal of tamarisk and giant reed to reduce threats to channel stability, and promotes the control of invasive species that inhibit the development of native riparian vegetation.

Now, as a member of the Assembly's Water, Parks and Wildlife Committee, I am concerned with protecting California's waterways and wildlife habitat. This project will enhance the ability of local organizations to effectively manage invasive species and to restore riparian vegetation.

I have long supported the Conservancy efforts and urge CalFed to give the Conservancy's tamarisk and giant reed control project fullest consideration and funding. If a representative would like to discuss the project with me by phone, he or she may call Lupita Ochoa (916-319-2008) in my office to arrange a time.

Sincerely,

Helen M Thomson

HT:ef

HELEN M. THOMSON

I-019870

United States Department of the Interior

BUREAU OF LAND MANAGEMENT
Ukiah Field Office
2550 North State Street
Ukiah, California 95482

In Reply Refer To:
8000 (F)
(CA 340)

APR 15 1999

To:

CALFED
Bay-Delta Program

Dear Sir/Madame:

The purpose of this communication is to inform your office that the Bureau of Land Management is fully supportive of the proposal by the Cache Creek Conservancy for tamarix and arundo control on Cache Creek.

This office remains an active Cache Creek Stakeholder, managing lands in the upper Cache Creek watershed, where the intrusion of tamarix continues to be a growing concern. The Bureau has recently acquired, through the land exchange program, 5,000 acres, which included 1.5 miles of Bear Creek, an important drainage in the Cache Creek watershed. The Bureau is in the process of acquiring another 7,000 acres which includes another four miles of Bear Creek. As this perennial water flow has been extensively invaded by tamarix, the Bureau eagerly anticipates the results of the proposed demonstration projects in this grant to guide the Bureau in tamarix removal.

Again, the Bureau personnel in this office and throughout California are staunch supporters of this grant proposal, the results of which are to be implemented for future management of tamarix & arundo on Public Lands.

If you have any questions please call Pardee Bardwell at (707)468-4055.

Sincerely,

Richard C. Burns
Area Manager

I-019871

DEPARTMENT OF THE ARMY
U.S. ARMY ENGINEER DISTRICT, SACRAMENTO
CORPS OF ENGINEERS
1325 J STREET
SACRAMENTO, CALIFORNIA 95814-2922

REPLY TO ATTENTION OF

April 16, 1999

Planning Division

Ms Ann Brice
Cache Creek Conservancy
34490 County Road 25
Woodland California 95695

Dear Ms Brice,

Thank you for the opportunity to review your proposal to control the invasion of *Tamarix sp.* (Salt Cedar) and *Arundo donax* (Giant Reed) in the Cache Creek watershed. The Corps is very supportive of the proposal, and agrees that the control of nonnative plant species in the Cache Creek watershed will result in substantial benefits to aquatic habitats, fisheries, and riparian ecosystem integrity and diversity in the watershed. The control of nonnative species in the Cache Creek watershed will also minimize the nonnative species from spreading into the Sacramento-San Joaquin Delta and into the San Francisco Bay estuary.

Our December 1995 reconnaissance report, Cache Creek Environmental Restoration, California, indicated that *Tamarix sp.* and *Arundo donax* are nonnative invasive plant species that reduce channel floodflow carrying capacity, compete and replace native plant species, reduce water supply to the native plant species and wildlife, reduce riparian habitat diversity, and change the soil chemistry.

Eradication of the *Tamarix sp.* and *Arundo donax* within the Cache Creek watershed is imperative to avoid serious environmental habitat and aquatic species problems in the Bay-Delta, San Joaquin River, and Sacramento River.

I offer the Corps' full support and cooperation, and encourage other stakeholders in the region to support your efforts

Sincerely,

Walter Yep

Walter Yep
Chief, Planning Division

I -019872

I-019872

STATE OF CALIFORNIA – THE RESOURCES AGENCY GRAY DAVIS, Governor

DEPARTMENT OF CONSERVATION
801 K Street, MS 09-06
Sacramento, CA 95814
TEL: (916) 323-9198
FAX: (916) 322-4862
E-MAIL: omrcal@consrv.ca.gov

April 13, 1999

Dr. Ann Brice
Cache Creek Conservancy
34490 County Road 25
Woodland, CA 95695

RE: CALFED proposal for *Tamarix* and *Arundo* control on Cache Creek

Dear Dr. Brice:

The Department of Conservation's Office of Mine Reclamation (OMR) would like to express its support for the Conservancy's proposal to CALFED entitled *Tamarix* and *Arundo* Control on Cache Creek Removal, Revegetation, Management, and Education.

OMR has been involved with Cache Creek since 1976 through the Surface Mining and Reclamation Act, because of the extensive gravel mining in the watershed One significant issue of reclamation on these mines is that of encroachment by exotic plant species, largely *Tamarix* and *Arundo*. The eradication protocol that will be provided by this project will help to mitigate past impacts and will prevent further impacts to the remaining native riparian habitat along the creek.

This letter constitutes a commitment by OMR to provide to the Conservancy the staff expertise as outlined in the proposal. We look forward to the information that this project will generate and to working with the Conservancy.

Please contact me a (916) 323-9198 if we can be of further assistance to you in facilitating this project.

Sincerely,

Glenn Stober
Assistant Director

I-019873

County of Yolo

625 Court Street, Room 204 Woodland, California 95695 (530) 666-8195 FAX (530) 666-8193

BOARD OF SUPERVISORS

First District - Mike McGowan
Second District - Lois Wolk
Third District - Tom Stallard
Fourth District - Dave Rosenberg
Fifth District - Lynnel Pollock
County Administrator - Victor Singh
Clerk of the Board - Paula Cooper

April 6, 1999

CALFED Bay-Delta Program Office
1416 Ninth Street, Suite 1155
Sacramento, CA. 95814

Dear Sir or Madam,

The Yolo County Board of Supervisors supports the grant application proposed by the Cache Creek Conservancy to develop management strategies for tamarix and arundo. These funds will significantly improve wildlife habitat values within the Cache Creek corridor, while providing cost-efficient and effective management techniques for local landowners. Moreover, the County offers both the Correll property and the Cache Creek Nature Preserve for consideration as sites to be included in the grant proposal.

Studies have detailed the numerous adverse impacts related to invasive, non-native species such as tamarix and arundo. Tamarix can draw salt and minerals up from the soil and excrete them onto the ground, forming a "salt ring" that kills off surrounding plants and introduces contaminants into the watershed. Both plants generate a lot of litter and woody material, significantly increasing the potential for wildfires. They are also very thirsty species; water availability may be increased by two acre-feet for every one acre of tamarix removed. Finally, tamarix and arundo can choke waterways and increase both the severity and frequency of flooding, while providing extremely limited habitat value.

Through its adoption of the Cache Creek Resources Management Plan and the Capay Valley Area General Plan, Yolo County has been an advocate of riparian restoration and improving the quality of stream environments. Working cooperatively with willing landowners to manage these species is critical not only to the health of Cache Creek, but is also important to preventing similar problems from occurring in the Bay-Delta region. This project exemplifies these values and will play a valuable role in furthering the goals of the Ecosystem Restoration Program Plan.

The Board of Supervisors strongly encourages CalFed to providing funding for the Tamarix and Arundo Management Proposal submitted by the Cache Creek Conservancy. If you have any questions concerning the issues discussed in this letter, please contact David Morrison at (530) 666-8041. Thank you for your consideration.

Sincerely,

Mike McGowan

Mike McGowan, Chair
Yolo County Board of Supervisors

cc: Ann Brice, Executive Director, Cache Creek Conservancy

I-019874

County of Yolo

DEPARTMENT OF AGRICULTURE, WEIGHTS AND MEASURES
70 Cottonwood Street Woodland, California 95695 (530) 666-8140 FAX (530) 666-6094

SCOTT T. PAULSEN
AGRICULTURAL COMMISSIONER
SEALER OF WEIGHTS AND MEASURES

April 9, 1999

Dr. Ann Brice, Executive Director
Cache Creek Conservancy
34490 County Road 25
Woodland, CA 95695

Dear Dr. Brice:

I have reviewed your executive summary for a CALFED proposal to control tamarisk (*Tamarix*) and giant reed (*Arundo*) in the Cache Creek Watershed. I support the concept and approach in your proposed project. It will restore the health of the Cache Creek Ecosystem, help to prevent the spread of these weed pests into the Bay-Delta ecosystem, and promote the importance of weed management, specifically, invasive non-native plants.

As you are aware, there are many invasive non-native weed pests in Yolo County, these two being of high priority in our riparian environment. You will soon be receiving a letter from me seeking your participation in the formation of a Yolo County Weed Management Area (YCWMA). The purpose of the YCWMA is to prevent the reproduction and spread of noxious weed pests within the county through the coordination of all land managers and owners with common weed problems in common areas. I believe this project, if approved, would be an integral component in the YCWMA.

Public awareness and effective management of non-native invasive weed species is critical to all of us concerned with the overall health of our land. I look forward to hearing about the future success of this project.

Sincerely,

Scott T. Paulsen
Agricultural Commissioner

I-019875

YOLO COUNTY
FLOOD CONTROL & WATER CONSERVATION DISTRICT

April 15, 1999

Re: ***Tamarix*** and ***Arundo*** Control on Cache Creek:
Removal, Revegetation, Management, and Education

To Whom It Concerns:

The Yolo County Flood Control and Water Conservation District ("District") strongly supports the request for grant funds as outlined in the Cache Creek Conservancy's above referenced grant application.

Cache Creek is a major waterway through Yolo County and a tributary to the Yolo By-pass, the Sacramento River and the Bay/Delta. The creek is infested with both ***Tamarix*** and ***Arundo*** and has the potential to spread these highly invasive noxious weeds to areas downstream. The spread of theses non-natives has not only environmental impacts, but also social impacts. e.g. decreasing waterway capacities increases the size of the associated floodplain and exacerbates the meanderings of natural waterways and the associated erosion.

The District actively removed these species from Cache Creek for about a year using workers from various State job fare programs. This source of labor will be unavailable and the District's program ending by summer 1999. The District's program addressed only the most critical creek areas with flood and erosion problems. Eradication of these species cannot be accomplished by a one year program. Nor can it be accomplished by a single entity.

The Cache Creek Conservancy's proposal will address the long term problem by assessing the status of the infestation while removing the species and replacing them with native species and monitoring the results. More importantly to its long range success is the public education component of the program. In order to eradicate these species, private landowners must be educated to the problem, to the eradication methods and to the management strategies available. Private landowners must be impressed by the need to take action on their own behalf.

The District believes that this program can develop the necessary grassroots support and action needed to implement ***Tamarix*** and ***Arundo*** removal by private landowners, and organizations and agencies. It should provide the knowledge, understanding and desire to make the critical decisions that result in the actions necessary to eradicate these two highly invasive noxious pest species.

Sincerely yours,

James F. Eagan
General Manager

34274 State Highway 16
Woodland, CA 95695
(916) 662-0265
FAX (916) 662-4982

General Manager
James F. Eagan

I —019876

I-019876

UNIVERSITY OF CALIFORNIA, DAVIS

BERKELEY • DAVIS • IRVINE • LOS ANGELES • RIVERSIDE • SAN DIEGO • SAN FRANCISCO
SANTABARBARA • SANTA CRUZ

DIVISION OF AGRICULTURE AND NATURAL RESOURCES
COLLEGE OF AGRICULTURAL AND ENVIRONMENTAL SCIENCES
AGRICULTURAL EXPERIMENT STATION
COOPERATIVE EXTENSION

JOSEPH M. DI TOMASO
WEED RESEARCH AND INFORMATION CENTER
DAVIS, CALIFORNIA 95616-8746
PHONE: 530-754-8715
FAX: 530-752-4604
E-MAIL: ditomaso@vegmail.ucdavis.edu
WEB SITE: http://wric.ucdavis.edu

10 April 1999

Ann Brice
Cache Creek Conservancy
34490 County Road 25
Woodland, CA 95696
Phone/FAX: 530-661-1070

Dear Ann:

I would be happy to participate in the *Arundo* and *Tamarix* control project on Cache Creek. I am willing to provide literature, consultation, preparing educational materials, and review manuscripts, techniques, and data. In addition, I would like to become involved in a collaborative research project looking at developing more effective control strategies for *Tamarix* along Cache Creek. I am very pleased that the Cache Creek Conservancy is undertaking this project at a time when the creek can still be saved. In Southern California and other southwestern desert riparian areas, management strategies were implemented long after *Tamarix* and *Arundo* infestations completely occupied these sites. The cost and difficulty associated with control and restoration have been immense. I believe that the Cache Creek Conservancy is taking appropriate steps to avoid these problems, as opposed to waiting until the creek is nearly overrun with these two highly invasive noxious weeds. I am happy to be a part of such a project.

Sincerely,

Joseph M. DiTomaso

Joseph M. DiTomaso
Non-Crop Weed Ecologist

I-019877

Yolo County Resource Conservation District
221 W. Court St., Suite 1 • Woodland, CA 95695
Phone (916) 662-2037 (916) 662-4876 FAX

April 15, 1999

Ann Brice
Cache Creek Conservancy
34490 Co Rd 25
Woodland, CA. 95695

Dear Ann:

The Yolo County Resource Conservation District offers our full support for your *Tamarix* and *Arundo* control project on Cache Creek. These noxious weeds have displaced miles of natural riparian and wetland habitat along the creek and have at times exacerbated opposite bank erosion. The District is working hard in all county watersheds to promote efforts that will restore healthy, biodiverse ecosystems, and Cache Creek is a critical waterway that suffers from years of deforestation, erosion, and re-population by these undesirable species.

Your planned documentation and monitoring of the invasion will provide an important overview of the problem; this is a critical part of your education component. Demonstration sites will give local landowners and others working on control efforts first-hand experience on removal techniques and restoration with other species. Monitoring of natural plant colonization will determine the viability of this approach to restoration on the creek as it will show whether most sites are simply re-invaded.

Desperately needed, the education program will create a coordinated approach to reach landowners and other support agencies to inform and support voluntary efforts in removing and replacing *Tamarisk* and *Arundo* with biologically-desirable and erosion-reducing species. Ideally, as you reach out to landowners, they will reach out to each other and create multi-parcel projects that save work, time, and dollars while speeding the process of creek-wide restoration. As the *Tamarix and Arundo* invasion plagues many Western water systems, a successful model such as yours can readily be reproduced by many other groups.

We look forward to participating with the Conservancy and others on this important project.

Sincerely,

Katy Pye

Katy Pye
Executive Director

I-019878

To: Bay Delta Program
Agency: CALFED
Re: Cache Creek Conservancy Grant Program
Date: April 5, 1999

MEMORANDUM

On behalf of the Yolo Land Trust, I would like to encourage your favorable consideration of the Cache Creek Conservancy's grant application for "*Tamarix and Arundo* Control on Cache Creek: Removal, Revegetation, Management and Education".

I have read the Conservancy's Executive Summary for the grant application and believe that the project is well thought out, well designed, and will be effective. The project leaders are well qualified to conduct a scientifically controlled demonstration project and well connected for developing educational outreach and enlisting further support.

Tamarix and Arundo pose a very significant threat to the Cache Creek ecosystem and have the potential for spreading into other areas of Northern California including the Delta. These noxious, invasive species crowd out native species, degrade habitat values, and contribute to rebound creekside erosion and flooding in area impacted by its presence. If nothing is done to control this invasion, the problem will inevitably grow worse.

The Yolo Land Trust was founded over ten years ago to help protect the land resources of Yolo County. We strongly endorse the efforts of organizations such as the Cache Creek Conservancy that work toward similar goals. We hope you will look favorably upon the Conservancy's application and fund the project to its full extent.

Respectfully,

Tony Fernandez, Jr.
President

From the desk of...

Tony Fernandez, Jr.
President
Yolo Land Trust
P.O. Box 1196
Woodland, CA 95776

530.795.3110
Fax: 530.795.3220

■

TEAM ARUNDO DEL NORTE

A multi-agency partnership dedicated to the control of the invasive plant Arundo donax where it threatens riparian ecosystems in Northern and Central California

205 First Street West
Sonoma, CA 95476

http://ceres.ca.gov/tadn
tadn@ceres.ca.gov

April 12, 1999

To Whom It May Concern,

Team Arundo del Norte wishes to express its support and recommendations for the CALFED project proposed by the Cache Creek Conservancy for the eradication of Arundo donax in Cache Creek.

TAdN seeks to promote and encourage local environmental stewardship groups to address the problem of Arundo infestation of riparian ecosystems as part of a comprehensive creek conservation program. Cache Creek is one of the Central Valley's remaining strongholds for a wide aggregation of native fish and other species, and the Conservancy's project is important and timely for the preservation of the health of Cache Creek and its ability to continue to support this biological diversity. Arundo threatens the integrity of this ecosystem by changing physical stream processes and displacing native species. In addition to these ecological impacts, Arundo causes negative economical, social and public health impacts by creating an increasing trend toward fire and flooding.

The Cache Creek Conservancy's project will not only directly address the rapidly spreading Arundo infestation damaging Cache Creek's native ecosystem, it will contribute to the greater pool of knowledge badly needed by other Arundo eradication efforts about cost-effective and environmentally sound methods for removal of Arundo. It will also build local stewardship by raising awareness of the threat posed by this and other non-native invasive species, and the value of a functioning native riparian ecosystem.

Team Arundo del Norte recommends this project for funding by CALFED because it meets the goals of the CALFED project and its NIS Strategic Plan to protect native habitat from the harmful effects of non-native invasions.

Sincerely,

Deanne DiPietro for Team Arundo del Norte

US Environmental Protection Agency • CA Department of Water Resources • Napa Ag Commissioner
Jones & Stokes Associates • CA Department of Fish and Game
San Francisco Estuary Institute • UC Berkeley • UC Davis • The Nature Conservancy
Sonoma Ecology Center • CERES • Circuit Rider Productions

I —019880

I-019880

ATTACHMENT D. Letters of Permission and Notification Letter to Yolo County

I-019881

Cache Creek Conservancy

April 15, 1999

David Morrison
Resource Manager
Yolo County Planning and Public Works Department
Woodland, CA 95695

Dear David:

This letter is to notify you of our intention to remove *Tamarix* and *Arundo* on the property of cooperating landowners if we receive funding from CALFED for Cache Creek Conservancy's grant proposal entitled "*Tamarix* and *Arundo* Control on Cache Creek: Removal, Revegetation, Monitoring, Management and Education". Since you are a partner in the grant proposal and the Yolo County Board of Supervisors has included a letter of support in the proposal packet, this notice is being sent simply to fulfill a CALFED requirement.

Thank you for all of your support.

Sincerely,

Ann Brice
Executive Director

34490 County Road 25, Woodland, CA 95695 *Phone/Fax: (530) 661-1070*

I-019882

Solano
Concrete Co., Inc.
IT COSTS NO MORE FOR THE BEST
CONTRACTOR'S LICENSE
NUMBER 201665

MAIN OFFICE
1601 CEMENT HILL RD.
FAIRFIELD, CA 94533-2659
707-422-2520
FAX 707-422-0492
DISPATCH 422-9983

ROCK PLANT AT
MADISON, CALIF.
530-666-2137
707-448-7121

CALFED Bay Delta Program
C/O Cache Creek Conservancy
34490 County Road 25
Woodland, CA 95695

March 31, 1999

Dear Ann and Jan:

Please be advised that you have permission to enter our property along Cache Creek for the purposes of setting up experimental plots and testing various removal methods for Tamarix and Arundo. This permission is granted based on the understanding that we will be held harmless for any consequences of the entry and any injuries or legal ramifications resulting therefrom. This permission is granted for the years 2000-2002.

Please notify me when personnel will be entering the property, and please warn them that heavy equipment is in use and may be dangerous.

I wish you luck with the testing program.

Sincerely,

Anthony Russo
Vice President

I-019883

SCHWARZGRUBER & SONS, INC.

SAND — GRAVEL
Screened and Washed

16550 COUNTY ROAD 96 WOODLAND, CALIFORNIA 95695 TELEPHONE (916) 662-4590

April 6, 1999

Ann Brice
Cache Creek Conservancy
34490 County Road 25
Woodland, CA 95695

Dear Ann,

I am writing to inform the Nature Conservancy and Yolo County Community Development Agency that you have our permission to enter our section of Cache Creek to remove Tamarix and Arundo.

Sincerely,

Thomas Schwarzgruber

I-019884

cache creek
aggregates

April 5, 1999

CAL FED
Bay Delta Program
c/o Cache Creek Conservancy
34490 County Road 25
Woodland, CA 95695

To Whom It May Concern:

Cache Creek Aggregates supports the efforts of the Cache Creek Conservancy to control Tamarix and Arundo in the Cache Creek watershed. We are willing to allow access to our property to remove Tamarix and Arundo and will co-operate if they wish to set up test plots for various removal and revegetation methods.

Please contact me if you need further information.

Sincerely,

BEN ADAMO
Plant Manager

BA:vcb

Cache Creek Aggregates, a subsidiary of R.C. Collet, Inc.
P.O. Box 1965, Woodland, CA 95776-1965 • ~~916~~ 530 662-9383 • fax: 916-661-1487

I —0 1 9 8 8 5

I-019885

Corporate Office
3500 American River Drive
P.O. Box 15002
Sacramento, CA 95851-1002
(916) 484-3011 • FAX (916) 484-7012

TEICHERT AGGREGATES

Established 1887

April 7, 1999

Proposed CALFED Bay Delta Grant Program
C/O Cache Creek Conservancy
34490 County Road 25
Woodland, CA 95695

Re: Tamarisk Control on Selected Mining Properties

Dear Ann and Jan:

Please be advised that you and your invited guest(s) have limited permission to enter Teichert's Esparto, Storz and Coors properties, which are contiguous to Cache Creek, for the purpose of establishing experimental test plots and monitoring eradication methods to remove tamarisk and arundo.

Permission is granted based on the understanding that Teichert will be held harmless for any consequences of the entry and any injuries or legal ramifications that could result therefrom. Prior to entry, all participants must sign hold harmless statements. Both the plant manager (Eric Herman, 530/661-4295) and I (916/484-3319) must be notified by phone prior to entry. All hold harmless forms are to be mailed or faxed to me prior to entry. The duration of this qualified entry is granted for the period 2000-2002.

In addition to all participants signing hold harmless forms, Teichert must be added as an additional insured to the Conservancy insurance policy while this activity is underway. Please also be advised that the terrain is uneven and rocky, and wildlife and poison oak are present. Also be advised that, since this is the gaining reach of the creek, water should be anticipated. Finally, please remember that these are mining properties, and that various equipment (excavators and gravel trucks) will also be in use.

We wish you success in this endeavor. If you should have any questions regarding our granting of permission, please call (916/484-3319).

Sincerely,

Lillie O'Keeffe Noble

Lillie O'Keeffe Noble
Project Manager

Enclosure
Cc: Randy Sater
Eric Herman
Pat Elliot
David Morrison

SYAR INDUSTRIES, INC.

April 13, 1999

Ann Brice and Jan Lowrey
Proposed CALFED Bay Delta Grant Program
C/O Cache Creek Conservancy
34490 County Road 23
Woodland, CA 95695

Re: Tamarisk Control on Syar Industries, Inc. Properties

Dear Ann and Jan.

Per your Memo of April 7, 1999, please be advised that Syar Industries, Inc. (Syar) is willing to grant permission for the Cache Creek Conservancy (Conservancy) to enter property owned by Syar Industries Inc. (Syar), within the bed of Cache Creek, solely for the purpose of eradication of tamarisk and arundo plants seriously invading the bed of the creek. Syar's permission is granted based on the following conditions:

1. Syar will be held harmless for any consequences of the entry and any injuries or legal ramifications that could result therefrom.
2. Prior to entry, all participants must sign hold harmless statements, in a form supplied by Syar.
3. Both the plant manager (Jerry Schwab 530-787-2033) and I (707-259-5826) must be notified by phone prior to entry.
4. All hold harmless forms are to be mailed or faxed to me prior to entry.
5. The exact area that will be used for this eradication effort will be agreed upon by Syar prior to the Conservancy entering Syar's property.
6. It will be the responsibility of the Conservancy to obtain all required permits prior to the commencement of this work .
7. The duration of this qualified entry is granted for a three year period (2000-2002), provided all conditions to entry are satisfied.
8. In addition to all participants signing hold harmless forms, Syar must be added as an additional insured to the Cache Creek Conservancy's insurance policy while this activity is underway.

Please also be advised that the terrain is uneven and rocky, and wildlife and poison oak are present. Also be advised that, since this is a creek, water should be anticipated. Finally, please remember that these are mining properties, and that various equipment (excavators and gravel trucks) will also be in use.

S:\UPPER\Y\BayDeltaGrant.lwp

2301 NAPA-VALLEJO HWY. • P.O. BOX 2540 • NAPA, CA 94558-0524 • PHONE: 707/252-8711 • FAX: 707/224-5932

We wish you success in this endeavor If you should have any questions regarding our granting of permission, please give me a call.

Sincerely,

John F. Perry
Vice President, Engineering

cc: James M. Syar
Ralston P. Roberts
David Morrison

S:\JFPERRY\BayDeltaGrant.lwp

2301 NAPA-VALLEJO HWY. · P.O. BOX 2540 · NAPA, CA 94558-0524 · PHONE: 707/252-8711 · FAX: 707/224-5932

GOLD OAK RANCH

David & Ann Scheuring
15274 Road 42 / Rumsey, CA 95679
(530) 796-2166 E-mail goldoak@afes.com

April 5, 1999

Cal Fed Bay Delta Program
C/o Cache Creek Conservancy
34490 CR 95
Woodland, CA 95695

In support of Grant Application by Cache Creek Conservancy for removal of arundo and tamarisk along Cache Creek

We own about a mile of streambank along Cache Creek in the Capay Valley. We are very concerned about the invasion of exotic pest species such as arundo and tamarisk in the watershed. Both the ecology and the hydrology of the creek are being changed by these two species as they continue to spread and colonize more sites. Over the last five years we have observed steady encroachment of tamarisk, in particular, along reaches partially scoured by flooding in recent wet years. If nothing is done, we fear that Cache Creek will become increasingly choked by these pest species.

We enthusiastically support Cache Creek Conservancy's proposal to remove these species on selected sites along Cache Creek and to renovate degraded areas with the replanting of native riparian species.

Cache Creek Conservancy has our permission to remove tamarisk and arundo from our property and to conduct revegetation activities as needed. We would be very willing cooperators.

Please give favorable consideration to the CCC proposal.

Sincerely,

David and Ann Scheuring

David and Ann Scheuring

I-019889

April 13, 1999

VIA FACSIMILE ONLY (530) 661-1070

Ann Brice
Cache Creek Conservancy
34490 County Road 25
Woodland, California 95695

Re: Permission

Dear Ann:

The Cache Creek Conservancy has permission to enter my family's land both at the Correll Preserve and adjacent thereto for purposes of removing invasive species such as Tamarisk.

Very Truly Yours,

Mark D. Harrison

MDH/lr

LOWREY RANCH

Jan LOWREY
PO BOX 128
RUMSEY, CAL 95679
530-796-3210 Fax 530-796-3210

April 15, 1999

Ann Brice
Cache Creek Conservancy
34490 County Road 25
Woodland, CA 95695

Dear Ann:

The Cache Creek Conservancy has permission to come on my family's land along Cache Creek near Rumsey. We have 1.5 miles of creek front, much of it infested with tamarisk. My family strongly supports the Conservancy's restoration efforts and especially the proposal you are submitting to CALFED.

Sincerely,

Jan Lowrey

I-019891

ATTACHMENT E. Documents

I-019892

APPLICATION FOR FEDERAL ASSISTANCE

OMB Approval No. 0348-0043

		2. DATE SUBMITTED: 4-16-99	Applicant Identifier:
1. TYPE OF SUBMISSION: Application ☐ Construction ☒ Non-Construction; Preapplication ☐ Construction ☐ Non-Construction		3. DATE RECEIVED BY STATE	State Application Identifier
		4. DATE RECEIVED BY FEDERAL AGENCY	Federal Identifier

5. APPLICANT INFORMATION

Legal Name: Cache Creek Conservancy

Organizational Unit: N/A

Address (give city, county, State, and zip code): 34490 County Road 25, Woodland, CA 95695

Name and telephone number of person to be contacted on matters involving this application (give area code): Jan Lowrey (530)-661-1070

6. EMPLOYER IDENTIFICATION NUMBER (EIN): ☐☐-☐☐☐☐☐☐☐

7. TYPE OF APPLICANT (enter appropriate letter in box): ☒

A. State; B. County; C. Municipal; D. Township; E. Interstate; F. Intermunicipal; G. Special District; H. Independent School Dist.; I. State Controlled Institution of Higher Learning; J. Private University; K. Indian Tribe; L. Individual; M. Profit Organization; N. Other (Specify) Non-Profit 501.C.3

4. TYPE OF APPLICATION: ☒ New ☐ Continuation ☐ Revision

If Revision, enter appropriate letter(s) in box(es): ☐ ☐

A. Increase Award; B. Decrease Award; C. Increase Duration; D. Decrease Duration; Other (specify):

9. NAME OF FEDERAL AGENCY:

10. CATALOG OF FEDERAL DOMESTIC ASSISTANCE NUMBER: ☐☐-☐☐☐

TITLE:

11. DESCRIPTIVE TITLE OF APPLICANT'S PROJECT: CALFED (PSP Feb. 1999) Removal of Non-Native Invasive Species (Tamarisk and Arundo) from Cache Creek, re-vegetation of riparian corridor.

12. AREAS AFFECTED BY PROJECT (Cities, Counties, States, etc.): Cache Creek, Yolo County, CA

13. PROPOSED PROJECT: Start Date: Anticipated; Ending Date: 2003

14. CONGRESSIONAL DISTRICTS OF: a. Applicant: 3rd District: Congressman Doug Ose; b. Project: Tamarisk & Arundo removal, Native re-

15. ESTIMATED FUNDING:

a. Federal	$ 968,700 .00
b. Applicant	$ .00
c. State	$ .00
d. Local	$ .00
e. Other	$ .00
f. Program Income	$ .00
g. TOTAL	$ 968,700 .00

16. IS APPLICATION SUBJECT TO REVIEW BY STATE EXECUTIVE ORDER 12372 PROCESS?

a. YES. THIS PREAPPLICATION/APPLICATION WAS MADE AVAILABLE TO THE STATE EXECUTIVE ORDER 12372 PROCESS FOR REVIEW ON: DATE _____

b. No. ☐ PROGRAM IS NOT COVERED BY E. O. 12372 ☐ OR PROGRAM HAS NOT BEEN SELECTED BY STATE FOR REVIEW

17. IS THE APPLICANT DELINQUENT ON ANY FEDERAL DEBT?

☐ Yes If "Yes," attach an explanation. ☒ No

18. TO THE BEST OF MY KNOWLEDGE AND BELIEF, ALL DATA IN THIS APPLICATION/PREAPPLICATION ARE TRUE AND CORRECT, THE DOCUMENT HAS BEEN DULY AUTHORIZED BY THE GOVERNING BODY OF THE APPLICANT AND THE APPLICANT WILL COMPLY WITH THE ATTACHED ASSURANCES IF THE ASSISTANCE IS AWARDED.

a. Type Name of Authorized Representative	b. Title	c. Telephone Number
Ann Brice	Executive Director	530-661-1070
d. Signature of Authorized Representative		e. Date Signed: 4/15/99

Previous Edition Usable
Authorized for Local Reproduction

Standard Form 424 (Rev. 7-97)
Prescribed by OMB Circular A-102

I -019893

I-019893

OMB Approval No. 0348-0044

BUDGET INFORMATION - Non-Construction Programs

SECTION A - BUDGET SUMMARY

Grant Program Function or Activity (a)	Catalog of Federal Domestic Assistance Number (b)	Estimated Unobligated Funds		New or Revised Budget		
		Federal (c)	Non-Federal (d)	Federal (e)	Non-Federal (f)	Total (g)
1. CALFED	——→	$	$	$ 968,700.00	$	$ 968,700.00
2.						
3.						
4.						
5. Totals		$	$	$ 968,700.00	$	$ 968,700.00

SECTION B - BUDGET CATEGORIES

6. Object Class Categories	GRANT PROGRAM, FUNCTION OR ACTIVITY (1) CALFED	(2)	(3)	(4)	Total (5)
a. Personnel	$ 136,200.00	$	$	$	$ 136,200.00
b. Fringe Benefits					
c. Travel					
d. Equipment	15,000.00				15,000.00
e. Supplies	15,000.00				15,000.00
f. Contractual	777,500.00				777,500.00
g. Construction					
h. Other					
i. Total Direct Charges (sum of 6a-6h)	941,700				941,700.00
j. Indirect Charges	27,000.00				27,000.00
k. TOTALS (sum of 6i and 6j)	$ 968,700	$	$	$	$ 968,700.00
7. Program Income	$ N/A	$	$	$	$ Ø

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Standard Form 424A (Rev. 4-92)
Prescribed by OMB Circular A-102

I — 0 1 9 8 9 4

I-019894

SECTION C - NON-FEDERAL RESOURCES

(a) Grant Program	(b) Applicant	(c) State	(d) Other Sources	(e) TOTALS
8.	$	$	$	$
9.				
10.				
11.				
12. TOTAL (sum of lines 8 - 11)	$	$	$	$

SECTION D - FORCASTED CASH NEEDS

	Total for 1st Year	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter
13. Federal	$ 419,900 00	$ 13,000 00	$ 115,000 00	$ 151,600 00	$ 140,300 00
14. NonFederal					
15. TOTAL (sum of lines 13 and 14)					

SECTION E - BUDGET ESTIMATES OF FEDERAL FUNDS NEEDED FOR BALANCE OF THE PROJECT

(a) Grant Program	FUTURE FUNDING PERIODS (Years) (b) First	(c) Second	(d) Third	(e) Fourth
16. CALFED	$ 419,900 00	$ 356,000 00	$ 192,800 00	$
17.				
18.				
19.				
20. TOTAL (sum of lines 16-19)	$	$	$	$

SECTION F - OTHER BUDGET INFORMATION

21. Direct Charges: $941,700 00

22. Indirect Charges: $27,000 00

23. Remarks:

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STATE OF CALIFORNIA

NONDISCRIMINATION COMPLIANCE STATEMENT

STD. 19 (REV. 3-95) FMC

COMPANY NAME: Cache Creek Conservancy

The company named above (hereinafter referred to as "prospective contractor") hereby certifies, unless specifically exempted, compliance with Government Code Section 12990 (a-f) and California Code of Regulations, Title 2, Division 4, Chapter 5 in matters relating to reporting requirements and the development, implementation and maintenance of a Nondiscrimination Program. Prospective contractor agrees not to unlawfully discriminate, harass or allow harassment against any employee or applicant for employment because of sex, race, color, ancestry, religious creed, national origin, disability (including HIV and AIDS), medical condition (cancer), age, marital status, denial of family and medical care leave and denial of pregnancy disability leave.

CERTIFICATION

I, the official named below, hereby swear that I am duly authorized to legally bind the prospective contractor to the above described certification. I am fully aware that this certification, executed on the date and in the county below, is made under penalty of perjury under the laws of the State of California.

OFFICIAL'S NAME: Ann Brice

DATE EXECUTED: 4-15-99

EXECUTED IN THE COUNTY OF: Yolo

PROSPECTIVE CONTRACTOR'S SIGNATURE:

PROSPECTIVE CONTRACTOR'S TITLE: Executive Director

PROSPECTIVE CONTRACTOR'S LEGAL BUSINESS NAME: Cache Creek Conservancy

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